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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,456	03/16/2004	Gary R. Lauterbach	03226/358001; SUN030251	3249

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OSHA LIANG L.L.P./SUN
TWO HOUSTON CENTER
909 FANNIN, SUITE 3500
HOUSTON, TX 77010

EXAMINER	
JAKOVAC, RYAN J	

ART UNIT	PAPER NUMBER
2445	

NOTIFICATION DATE	DELIVERY MODE
01/06/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@oshaliang.com
lord@oshaliang.com
hathaway@oshaliang.com

Office Action Summary	Application No.	Applicant(s)	
	10/801,456	LAUTERBACH, GARY R.	
	Examiner	Art Unit	
	RYAN J. JAKOVAC	2445	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-7,10,26-28,30,31,33,35,36 and 38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-7, 10, 26-28, 30-31, 33, and 35-36, and 38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed 11/19/2009 has been entered.

Response to Arguments

2. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

3. Applicant's Admitted Prior Art substantially discloses the structure of the Applicant's invention. Fig. 1, labeled "Prior Art", explicitly discloses features of the Applicant's invention as claimed including a plurality of nodes housed within a single computer having a plurality of processors and a mesh interconnect, located within the single computer connecting the plurality of nodes. See Applicant's fig. 1 and paragraphs [0001-0004] of the Applicant's specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3-7, 10, 26-28, 30-31, 33, and 35-36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of U.S. 2002/0010783 to Primak et al (hereinafter Primak) in view of US 20050125487 to O'Connor et al (hereinafter O'Connor), and further in view of US 7299294 to Bruck et al (hereinafter Bruck).

Regarding claim 1, 33, Primak teaches a system comprising:

a plurality of nodes housed within a single computer having a plurality of processors (AAPA, fig. 1.); and

a mesh interconnect, located within the single computer connecting the plurality of nodes (AAPA, fig. 1.),

wherein a first node selected from the plurality of nodes comprises a first router for interfacing with the plurality of nodes using the mesh interconnect and a first replicated service executing on a first operating system of the first node (AAPA, fig. 1, [0001-0004], processors nodes route requests.),

wherein a second node selected from the plurality of nodes comprises a second router for interfacing with the plurality of nodes using the mesh interconnect and a second replicated service executing on a second operating system of the second node (AAPA, fig. 1, [0001-0004], processors nodes route requests.); and

AAPA does not disclose, however, Primak discloses wherein the first node is configured to:

generate, in response to the first service being unavailable, a request to replace the first replicated service (Primak, [0033-0042], a request is sent to another server of the cluster when the first service on the server becomes unavailable.),

route, based on the response and using a master-less routing policy implemented by the first router, the request for the first replicated service from the third node to the second node (Primak, fig. 3, [0034-0039], data redirected to new cluster server.);

wherein the plurality of nodes comprises a first subset of nodes and a second subset of nodes, wherein the first node is in the first subset, and the second node is in the second subset, and wherein the first node is configured to send the request to the second subnet of nodes only when the first subnet of nodes cannot replace the first replicated service (Primak, [0033-0042].).

It would have been obvious to combine Primak with the teachings of AAPA since in order to load-balance clustered servers (Primak, abstract.). It would have been an obvious variant to one of ordinary skill in the art at the time of the invention since an accurate measure of availability could be reliably obtained by each individual server's locally observed status information.

AAPA and Primak do not expressly disclose, however, O'Conner discloses: sending the request to replace the first replicated service to the plurality of nodes using the mesh interconnect (O'Connor, [0018-0035], nodes send a distributed request.),

receiving a response to the request from the second node indicating that the second node comprises a replacement for the first replicated service. O'Conner discloses this request/response system in at least [0007-0035]. O'Conner discloses that each node may be a contact centre (O'Connor, [0013], "preferably, each node is a contact centre."). The nodes as disclosed in

O'Connor send a distributed request which is responded to by an available other node (O'Connor, [0018-0035].).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine this auction style distributed request system of O'Connor with the distributed cluster teachings of AAPA and Primak to allow a server of to offer a service request to competing clusters of the server as well as to utilize multiple bidding nodes to improve efficiency (O'Connor [0042].).

AAPA, Primak, and O'Conner do not expressly disclose receiving, after receiving the response from the second node, a request for the first replicated service from a third node of the plurality of nodes.

However, Bruck discloses receiving, after receiving the response from the second node, a request for the first replicated service from a third node of the plurality of nodes (Bruck, fig. 17, col. 27-28.).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of AAPA, Primak, and O'Conner with the teachings of Bruck in order to dynamically reconfigure traffic assignments in a clustered computing environment in order to maintain network availability and to provide fail-over and dynamic load balancing (Bruck, abstract, col. 3:35 to col. 4:50.).

Regarding claim 3, The combination of AAPA, Primak, O'Connor, and Bruck teaches the system of claim 1, wherein the second node comprises a cache indicating that the second replicated service is available (Primak, [0035], nodes store available capacity information..), and

wherein the second node is configured to generate the response based on the cache. (O'Connor, [0018-0035], nodes reply based on availability to service the request..).

Regarding claim 4, The combination of AAPA, Primak, O'Connor, and Bruck teaches the system of claim 1, wherein the first router comprises a lightweight communications protocol (Primak, [0035], Nodes communicate using UDP.).

Regarding claim 5, The combination of AAPA, Primak, O'Connor, and Bruck teaches the system of claim 1, wherein the first router comprises a heavy-weight communications protocol (Primak, [0035], Nodes communicate using TCP/IP.).

Regarding claim 6, The combination of AAPA, Primak, O'Connor, and Bruck teaches the system of claim 1, wherein the mesh interconnect provides at least two connection paths from the first node to the second node (O'Connor, fig. 2.).

Regarding claim 7, The combination of AAPA, Primak, O'Connor, and Bruck teaches the system of claim 1, wherein the first replicated service is a different application than the second replicated service (Primak, [0027].).

Regarding claim 10, The combination of AAPA, Primak, O'Connor, and Bruck teaches the system of claim 9, the combination of Primak and O'Connor does not expressly disclose wherein the first node is configured to send the first request using at least one selected from a

group consisting of a broadcast message and a multicast message. However, Primak in [0032] discloses the cluster servers broadcasting their availability. It would have been obvious to on of ordinary skill in the art at the time of the invention to broadcasting and/or multicasting the request as claimed since this amounts to applying a known method of transmission to a known device.

Regarding claim 26, The combination of AAPA, Primak, O'Connor, and Bruck teaches the system of claim 3. Although Primak and O'Connor do not expressly disclose wherein the cache comprises a table having entries for each replicated service provided by the second node, Primak in [0032-0035] disclose that nodes store information about other node's capacity/availability. It would have been obvious to on of ordinary skill in the art at the time of the invention to a table as claimed since this is an obvious variation of the system provided by Primak and O'Connor.

Regarding claims 27, 28, The combination of AAPA, Primak, O'Connor, and Bruck teaches the system of claim 1, wherein the first replicated service is unavailable when the first replicated service is busy, and when the first replicated service has failed (Primak, [0033].).

Regarding claim 36, the combination of AAPA, Primak, O'Connor, and Bruck teaches the system of claim 35,

wherein the plurality of nodes comprises a first subset of nodes and a second subset of nodes (Primak, Fig. 1.),

wherein the first node is in the first subset and the second node is in the second subset (Primak, [0014], "each server is associated with a non-overlapping sub-range of connection values associated with the cluster".),

wherein the second node is configured to send the request to the first subset of nodes only when the second subset of nodes cannot provide the service (Primak, [0033-0042], a request is sent to another server of the cluster when the first service on the server becomes unavailable.). The combination does not expressly disclose wherein each of the first subset of nodes and the second subset of nodes includes at least three nodes. However, varying the amount of nodes in a subset would have been obvious to one of ordinary skill in the art at the time of the invention since this amounts to mere design choice.

Regarding claim 30-31, 38, the combination of AAPA, Primak, O'Connor, and Bruck teaches the system of claim 1, the combination does not expressly disclose wherein the first operating system is different than the second operating system. However, it would have been obvious to one of ordinary skill at the art at the time of the invention to use a plurality of operating systems, for instance, on the servers of Primak, since this amounts to the simple substitution of one element for another yielding predictable results.

Regarding claim 35, the combination of AAPA, Primak, O'Connor, and Bruck teaches a system comprising:

AAPA discloses wherein the first node, the second node, the third node, and the mesh interconnect are housed within a single computer having a plurality of processors (AAPA, fig. 1, [0001-0004].)

AAPA does not expressly disclose, however, Primak discloses: a first node comprising a first router, a first application executing on a first operating system for performing a service, and a cache table having an entry indicating an availability of the service on the first node; (Primak, [0032], [0035], servers store available capacity information.).

a second node comprising a second router and a second application executing on a second operating system for performing the service, wherein the second node is configured to send a request to replace the service to the first node after failure of the second application (Primak, [0033-0042], a request is sent to another server of the cluster when the first service on the server becomes unavailable.);

route, based on the response and using a master-less routing policy implemented by the second router, the request for the service from the third node to the first node based on the response (Primak, fig. 3, [0032-0039], data redirected to new cluster server.),

wherein the first application is different than the second application (Primak, [0008], [0027].).

a mesh interconnect connecting a plurality of nodes including the first node and the second node (Primak, figs. 1-3.),

It would have been obvious to combine Primak with the teachings of AAPA since in order to load-balance clustered servers (Primak, abstract.). It would have been an obvious variant to one of ordinary skill in the art at the time of the invention since an accurate measure of

availability could be reliably obtained by each individual server's locally observed status information.

AAPA and Primak do not expressly disclose, however, O'Conner discloses: wherein the first node is configured to examine the entry in the cache based on the request to replace the service with the entry and send a response to the second node using the mesh interconnect (O'Connor, [0013], "preferably, each node is a contact centre." See also [0018-0035].),

wherein the second node is configured to:

receive the response from the first node (O'Conner, [0007-0035], request/response system. [0013], "preferably, each node is a contact centre." The nodes as disclosed in O'Connor send a distributed request which is responded to by an available other node, see [0018-0035].),

It would have been obvious to one of ordinary skill in the art at the time of invention to combine this auction style distributed request system of O'Connor with the distributed cluster teachings of AAPA and Primak to allow a server of to offer a service request to competing clusters of the server as well as to utilize multiple bidding nodes to improve efficiency (O'Connor [0042].).

AAPA, Primak, and O'Conner do not expressly disclose, however, Bruck discloses: receive a request for the service from a third node after receiving the response from the first node (Bruck, fig. 17, col. 27-28.),

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of AAPA, Primak and O'Conner with the teachings of Bruck in order to dynamically reconfigure traffic assignments in a clustered computing environment in

order to maintain network availability and to provide fail-over and dynamic load balancing (Bruck, abstract, col. 3:35 to col. 4:50.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN J. JAKOVAC whose telephone number is (571)270-5003. The examiner can normally be reached on Monday through Friday, 7:30 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ryan Jakovac/

/Rupal D. Dharia/

Supervisory Patent Examiner, Art Unit 2400